Claims

What is claimed is:

1. A positioning system for determining a position P of a positioning terminal, the system including a plurality of first signal sources each emitting a respective first signal, and one or more second signal sources each emitting a respective second signal, the first signals being synchronous to each other and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of the first signals, determining a distance from the positioning terminal to the first signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device for receiving the signals from the first signal sources to determine the position P and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (T_R) of a predetermined event of the second signals;

a control device for determining a signal propagation time (t) between the measurement device and one of the second signal sources by calculating a relative distance |P-Q| between the measurement device and the one second signal source based on the position P measured by the measurement device and a position (Q) of the one second signal source and by dividing the resulting distance by the signal propagation speed, and for determining a time (T_T) at which the one second signal source originates the predetermined event by solving $T_R - t$;

the positioning terminal having a receiving device for receiving the signals from the first and second signal sources; and

a communication device for communicating between the control device and the positioning terminal,

wherein the positioning terminal uses the time T_T as a reference to receive the signals from the first signal sources for positioning.

2. A positioning system for determining a position P of a positioning terminal, the system including a plurality of first signal sources each emitting a respective first signal, and one or more second signal sources each emitting a respective second signal, the first signals being synchronous with each other and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of at least one of the first and second signals, determining a distance from the positioning terminal to the first and second signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device associated with each second signal source for receiving the signals from the first signal sources to determine the position P and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (T_R) of a predetermined event of the second signals;

a control device for determining a signal propagation time (t) between the measurement device and its associated second signal source by calculating a relative distance |P-Q| between the measurement device and its associated second signal source based on the position P measured by the measurement

device and a position (Q) of the second signal source and by dividing the resulting distance by the signal propagation speed, and for determining a time (T_T) at which the second signal source originates the predetermined event by solving T_R - t;

the positioning terminal having a receiving device for receiving the signals from the first and second signal sources; and

a communication device for communicating between the control device and the positioning terminal,

wherein the positioning terminal receives the first and second signals for positioning.

3. The positioning system according to claim 1, wherein the first signal sources further comprise GPS satellites.

4. The positioning system according to claim 1, wherein the second signal sources further comprise base stations of a mobile communication network.

5. The positioning system according to claim 1, wherein the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and T_R to voluntarily report the measured P and T_R to the control device in the same mobile communication network.

6. The positioning system according to claim 1, wherein the measurement device further comprises a mobile terminal in good conditions, where the position

P of the measurement device can be determined without accurate time information, and measures P and T_R according to a request from the control device in the same mobile communication network to report the measured P and T_R to the control device.

7. A positioning system according to claim 1, wherein the second signal sources further comprise television broadcast stations.

8. The positioning system according to claim 2, wherein the first signal sources further comprise GPS satellites.

9. The positioning system according to claim 2, wherein the second signal sources further comprise base stations of a mobile communication network.

10. The positioning system according to claim 2, wherein the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and T_R to voluntarily report the measured P and T_R to the control device in the same mobile communication network.

11. The positioning system according to claim 2, wherein the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and T_R according to a request from the control

device in the same network to report the measured P and T_R to the control device.

12. A positioning system according to claim 1, wherein the second signal sources further comprise television broadcast stations.